

10/538708

JC17 Rec'd PCT/PTO 10 JUN 2005

AU9642221

(12) PATENT ABSTRACT (11) Document No. AU-A-42221/96
(19) AUSTRALIAN PATENT OFFICE

- (54) Title
VEHICLE BODY PORTION
- (51)* International Patent Classification(s)
F41H 007/04 B62D 025/20 B62D 039/00 F41H 007/02
F41H 007/10
- (21) Application No.: 42221/96 (22) Application Date: 30/01/96
- (30) Priority Data
- (31) Number (32) Date (33) Country
95/8780 18/10/95 ZA SOUTH AFRICA
- (43) Publication Date: 24/04/97
- (71) Applicant(s)
REUNERT MECHANICAL SYSTEMS LIMITED
- (72) Inventor(s)
CLAUDE FRANSOLETT; STEPHEN WILFRED ACKERMANN; RAOUL STEENEKAMP; DEON NEL
- (74) Attorney or Agent
GRIFFITH HACK, GPO Box 3125, BRISBANE QLD 4001
- (57) A vehicle body portion suitable for use on a land mine resistant vehicle, comprising a channel shaped base defining two opposing sides; a floor in the base spanning from one side of the base to the other, the floor being secured to the sides of the base; and the floor defining floor panels, the faces of which are at least partly spaced from the base and the panels bordering onto each other in a non-coplanar configuration in order that the floor does not extend linearly all the way from one side of the body to the other.

Best Available Copy

(12) PATENT
(19) AUSTRALIAN PATENT OFFICE

(11) Application No. AU 199642221 B2
(10) Patent No. 703896

(54) Title
Vehicle body portion

(51)⁶ International Patent Classification(s)
F 41H 007/06 F 41H 007/02
B 62D 025/20 F 41H 007/10
B 62D 039/00

(21) Application No: 199642221 (22) Application Date: 1996.01.30

(30) Priority Data

(31) Number (32) Date (33) Country
92/0700 1995.10.18 ZA

(43) Publication Date: 1997.04.24
(43) Publication Journal Date: 1997.04.24
(44) Accepted Journal Date: 1999.04.01

(71) Applicant(s)
Reunert Mechanical Systems Limited

(72) Inventor(s)
Claude Fransolet; Stephen Wilfred Ackermann; Raoul Steenekamp; Deon Nel

(74) Agent/Attorney
GRIFFITH BACK, GPO Box 3125, BRISBANE QLD 4001

(56) Related Art
US 5351990
US 5403063
GB 2187686

ABSTRACT

A vehicle body portion suitable for use on a land mine resistant vehicle, comprising a channel shaped base defining two opposing sides; a floor in the base spanning
5 from one side of the base to the other, the floor being secured to the sides of the base; and the floor defining floor panels, the faces of which are at least partly spaced from the base and the panels bordering onto each other in a non-coplanar configuration in order that the
10 floor does not extend linearly all the way from one side of the body to the other.

11
12
13
14
15
16
17
18
19
20

- 1 -

P/00/011
Regulation 3.2

AUSTRALIA
Patents Act 1990

ORIGINAL
COMPLETE SPECIFICATION
STANDARD PATENT

Invention Title: VEHICLE BODY PORTION

The following statement is a full description of this invention, including
the best method of performing it known to us:

GH&CO REF: P50461A/PJW

5
0
4
6
1
A
P
J
W

This invention relates to vehicle bodies suitable for use on land mine resistant vehicles.

Many bodies of land mine resistant vehicles have channel shaped bases for protecting persons or goods in the vehicle from land mine explosions. Such a channel shaped base defines two opposing sides and often the base has a V-shaped cross-sectional configuration.

It is also known to provide a floor in the base for further protection. Known floors are planar and extend directly from one side of the base to the other and the floor is secured to the said sides, usually by means of welding. A disadvantage of such a planar floor is that if the base is deformed, for example if the sides of the base are deformed towards each other as a result of a land mine explosion, the floor is very often pulled loose from the sides of the base. This may result in serious damage and injury to people and goods in the vehicle.

It is accordingly an object of the present invention to overcome or at least reduce the above disadvantage.

According to the present invention there is provided a vehicle body portion suitable for use on a land mine resistant vehicle, comprising a channel shaped base defining two opposing sides; a support panel in the base secured to at least one side of the base in a direction from one side of the base to the other, the support panel defining panel sections the faces of which are at least partly spaced from the base and the panel sections bordering onto each other in a non-coplanar configuration in order that the support panel does not extend linearly all the way onto said side of the base to which it is secured.

Preferably, the floor comprises a central floor panel and two first floor panels extending at an angle from



- 3 -

opposite sides of the central floor panel towards the
opposing sides of the base. Preferably the two first
floor panels in use extend to the operatively upper end
of the base and outwardly from the central floor panel,
5 the floor thus having a channel shaped configuration.

In one embodiment of the invention each first floor panel
may extend from the central floor section to border onto
a side of the base.

10 However, in a preferred embodiment of the invention the
floor may further include a second floor panel extending
outwardly from each first floor panel.

11
12
13
14
15



Preferably, each second floor panel extends from a first floor panel to border onto a side of the base.

The channel shaped base may comprise a generally V-shaped cross-sectional configuration. Each side of the base may comprise an operatively lower portion and an operatively upper portion with the upper portion angling more inwardly than the operatively lower portion.

The floor may be secured to the base at the position where the operatively upper and lower portions of the base sides border onto each other.

The channel shaped base may be provided with one or more capping plates extending over angles formed by portions of the base. The one or more capping plates are preferably provided on the operatively outside of the base.

The vehicle body portion may also include one or more longitudinal floor supports which extend generally parallel to the base sides against the floor and preferably on top of the floor. The vehicle body portion may also include one or more transverse floor supports extending against the floor from one side of

the body to the other.

Preferably the one or more transverse floor supports are provided on top of the floor.

One or more seats formations may also be provided in the base above the floor. The seat formations may be provided for one or more persons to sit on or to mount seats on.

Preferably two seat formations are provided extending along the sides of the base. Each seat formation may define a seat plate which is secured to a side of the base along one side thereof and supported in an elevated position above the floor. The seat plate may define a number of seat panels bordering onto each other in a non-coplanar configuration as the seat plate extends away from the side of the base. Preferably the seat plate has a similar configuration as the floor as it extends halfway from one base side to the other.

According to another aspect of the invention there is provided a vehicle including a vehicle body portion substantially as described hereinabove. The vehicle may comprise a land mine resistant vehicle.

Without thereby limiting the scope of the invention and by means of example only, one embodiment thereof will now be described with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a vehicle body portion according to the invention;

Figure 2 is a diagrammatic end view of the body portion of Figure 1 sectioned through line II - II; and

Figure 3 is a perspective view of a vehicle including the body portion of Figure 1.

In the accompanying drawings the same reference numerals are used to denote corresponding parts.

Referring now to the drawings a vehicle body portion 10 is provided which is suitable for using on a land mine resistant vehicle 30. As shown in Figure 3 the body portion 10 may form the lower rear part of the vehicle 30, that is the lower part of the vehicle 30 behind line A-A. The body portion 10 in this case thus defines the lower portion of the passenger carrying section of the vehicle 30.

The body portion 10 comprises a channel shaped base 11 defining two opposing sides 11.1. A floor 12 is provided in the base 11 spanning from one side 11.1 of the base 11 to the other side 11.1 and the floor 12 is secured to the sides 11.1 usually by means of welding. The floor 12 defines floor panels 12.1, 12.2 and 12.3 the faces of which are spaced from the base 11 and the panels 12.1, 12.2 and 12.3 border onto each other in a non-coplanar configuration in order that the floor 12 does not extend linearly all the way from one side 11.1 to the other side 11.1.

The floor 12 comprises a central floor panel 12.1 and two first floor panels 12.2 which extend to the operatively upper end of the base 11 and outwardly from the central floor panel 12.1, the floor 12 thus having a channel shaped configuration. The floor 12 further includes a second floor panel 12.3 extending outwardly and in this case also downwardly from each first floor panel 12.1. Each second floor panel 12.3 extends from a first floor panel 12.2 to border onto a side 11.1 where it is welded to the said side 11.1.

The channel shaped base 11 comprises a generally V-shaped cross-sectional configuration. Each side 11.1 of the base 11 defines an operatively lower portion

11.2 and an operatively upper portion 11.3 with the upper portion 11.3 angling more inwardly than the lower portion 11.2.

A capping plate 13 is provided to extend over the joint where the two sides 11.1 border onto each other. The capping plate 13 is located on the outside of the base 11.

The second floor panels 12.3 is secured to the base sides 11.1 at the position where the portions 11.2 and 11.3 border onto each other.

The vehicle body portion 10 also includes two longitudinal floor supports 14 which extend generally parallel to the base sides against the first floor panels 12.2 and on top thereof. The vehicle body also includes transverse floor supports 15, 16 and 17 extending against and on top of the floor panel 12.1 between the longitudinal floor supports 14. The longitudinal floor supports 14 are not secured to the floor 12 but only to the transverse floor supports 15, 16 and 17.

Seat formations 18 are also provided in the body portion 10 to which seats [not shown] may be secured in

use. Each seat formation 18 comprises a support member comprising an elongate member 18.1 supported above and parallel to a longitudinal floor support 14 by means of spacer members 18.2. Each seat formation 18 further includes a seat plate defining three seat panels 18.3, 18.4 and 18.5 bordering onto each other in a non-coplanar configuration in order to have a similar configuration as the floor 12 as it extends halfway from one base side 11.1 to the other base side 11.1. The seat panel sections 18.5 are welded to the upper portions 11.3 of the sides 11.1. Slots 18.6 are provided in the seat panels 18.3, 18.4 and 18.5.

It is believed that when a land mine explosion deforms the sides 11.1 of the base 11, the floor 12 can deform along the angles formed between the panels 12.1, 12.2 and 12.3 which will reduce the chances of the floor 12 tearing loose from the base 11. The same is also true of the seat formations 18.

It will be appreciated that many variations in detail are possible without thereby departing from the scope and spirit of the invention. The floor 12 may, for example, be provided with many different profiles.

CLAIMS

1. A vehicle body portion suitable for use on a land mine resistant vehicle, comprising a channel shaped base defining two opposing sides; a support panel in the
5 base secured to at least one side of the base to extend in a direction from one side of the base to the other, the support panel defining panel sections the faces of which are at least partly spaced from the base and the panel sections bordering onto each other in a non-coplanar configuration in order that the support panel
10 does not extend linearly all the way onto said side of the base to which it is secured.
2. The body portion of claim 1 wherein the panel sections of the support panel bordering onto each other
15 in a non-coplanar configuration are located in a region towards at least one side of the base to which the support panel is secured.
3. The body portion of claim 2 wherein the channel shaped base comprises a generally V-shaped cross-sectional configuration.
20
4. The body portion of claim 1 wherein the support panel comprises a floor which spans from one side of the base to the other and the floor being secured to the said sides.
25
5. The body portion of claim 1 wherein the support panel comprises a seat panel which is secured to one side of the base without extending all the way to the opposite side.
6. A vehicle body portion suitable for use on a
30 land mine resistant vehicle, comprising a channel shaped base defining two opposing sides;

THE NEXT PAGE IS PAGE 12



S:30461A/703

EDITORIAL NOTE - NUMBER 42221/96

**THIS SPECIFICATION DOES NOT CONTAIN A PAGE
NUMBERED 11.**

a floor in the base spanning from one side of the base to the other, the floor being secured to the sides of the base; and the floor defining floor panel sections, the faces of which are at least partly spaced from the base and the panel sections bordering onto each other in a non-coplanar configuration in order that the floor does not extend linearly all the way from one side of the body to the other.

7. The body portion of claim 6 wherein the floor comprises a central floor panel section and two first floor panel sections extending at an angle from opposite sides of the central floor panel section towards the opposing sides of the base.

8. The body portion of claim 7 wherein the two first floor panel sections in use extend generally to an operatively upper end of the base and outwardly from the central floor panel section, the floor thus having a channel shaped configuration.

9. The body portion of claim 8 wherein each first floor panel section extends from the central floor panel section to border onto a side of the base.



10. The body portion of claim 8 wherein the floor further includes a second floor panel section extending outwardly from each first floor panel section in a non-coplanar configuration thereto to border onto a side of the base.
11. The body portion of any one of claims 6 to 10 wherein the channel shaped base comprises a generally V-shaped cross-sectional configuration.
12. The body portion of claim 11 wherein each side of the base comprises an operatively lower portion and an operatively upper portion with the upper portion angling more inwardly than the operatively lower portion.
13. The body portion of claim 12 wherein the floor is secured to the base at the position where the operatively upper and lower portions of the base sides border onto each other.
14. The body portion of any one of claims 6 to 13 wherein the channel shaped base is provided with one or more capping plates extending over angles formed by portions of the base.



15. The body portion of claim 14 wherein the one or more capping plates are provided on operatively outside of the base.

16. The body portion of any one of claims 6 to 15
5 which includes one or more longitudinal floor supports which extend generally parallel to the base sides against the floor.

17. The body portion of any one of claims 6 to 16
10 which includes one or more seat formations provided in the base above the floor.

18. The body portion of claim 17 wherein two seat formations are provided extending along the sides of the base, each seat formation defining a seat panel which is
15 secured to a side of the base along one side thereof and supported in an elevated position above the floor.

19. The body portion of claim 18 wherein each seat panel defines a number of seat panel sections bordering onto each other in a non-coplanar configuration towards the side of the base as the seat panel extends away from
20 the side of the base



20. The body portion of claim 19 wherein each seat panel has a similar configuration as half of the floor as it extends from one base side to the other.
21. A vehicle body portion substantially as herein described with reference to the accompanying drawings.
22. A vehicle including a vehicle body portion of any one of the preceding claims.
23. The vehicle of claim 22 which is a land mine resistant vehicle.

Dated this 19th day of December 1996
REUNERT MECHANICAL SYSTEMS LIMITED
By their Patent Attorney
GRIFFITH HACK

REUNERT
MECHANICAL
SYSTEMS
LIMITED



42221/96

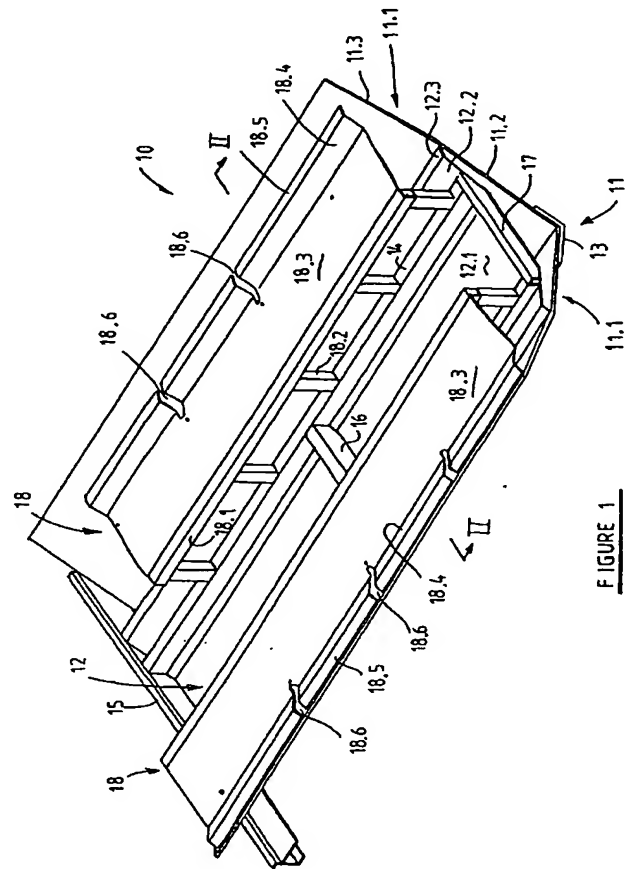


FIGURE 1

30 01 96 42221

42221/96

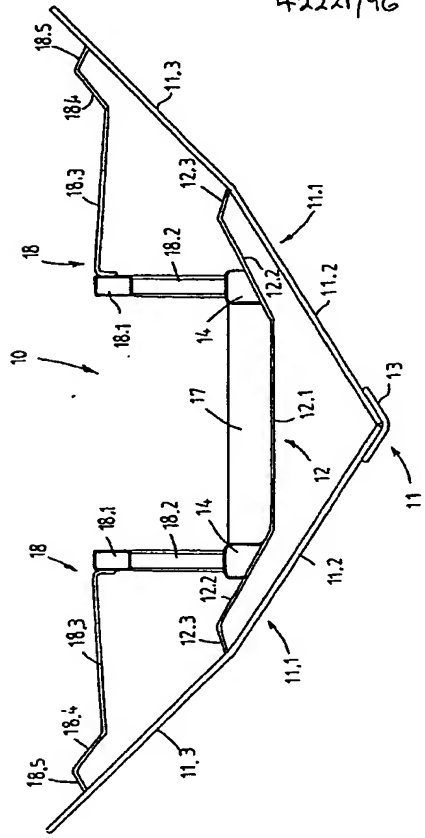


FIGURE 2

30 01 05 4221

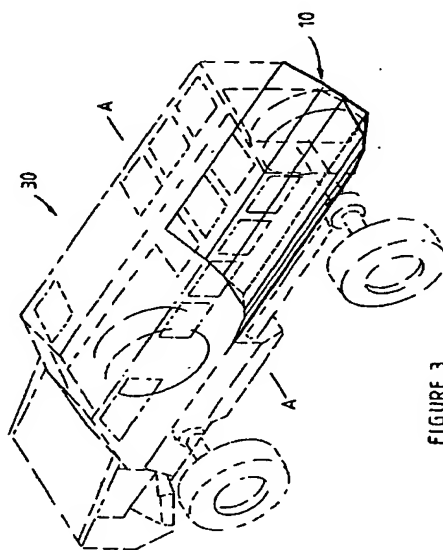


FIGURE 3

This Page is inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☒ BLURED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLORED OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REPERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images
problems checked, please do not report the
problems to the IFW Image Problem Mailbox**